FORESTRY SCIENCE IN THE SERVICE OF MAN

Number 7

WILDLIFE HABITAT

Catering To Hunters

What hunter would not be sorely disappointed if he returned home time after time from the woods without sighting any game? Such continued frustration might eventually cause him to give up the sport--which in turn could result in an under-harvest of game species, and a reduction in revenue for recreation and sporting goods industries.

Several wildlife biologists of the USDA Forest Service, Morgantown, W. Va., are conducting research to assure that West Virginia and neighboring states will continue to produce wildlife and hold the interest of sportsmen. These biologists are searching for methods to improve the environment of the forest for game without upsetting other forest uses. They know that when forests meet the animals' basic needs -- food and cover, plus resting areas and breeding grounds -- game continue to thrive. But they also know that forests can often support even larger numbers of game birds and animals, if measures for improving forest habitat are developed.

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NORTHEASTERN FOREST EXPERIMENT STATION • UPPER DARBY, PENNSYLVANIA 19082

These scientists feel that the most practical route to large-scale improvement of forest game habitat is through modifications of timber harvesting and forest management practices. Better coordination of timber and game harvests can mean substantial benefits to hunting and to all the attendant recreation enterprises.

As part of a study to determine the relationship and benefits of cutting practices, and size and distribution of cutting areas to wildlife, Forest Service biologists are working cooperatively with biologists of the West Virginia Department of Natural Resources.

Forest Service biologists Jack Ward Thomas and Bill Healy are concerned with the effects of forestry practices like even-aged forestry on deer, squirrels, grouse and turkeys and on the hunters of these animals. Under even-aged management all trees on a small section of forest are cut. In the first few years there will be a surge of new growth, especially with those tree species that do best in full sunlight. The early effects of the change should be good for deer and grouse, but not for squirrels; while it is difficult to predict intelligently about turkeys. Therefor turkeys are of primary interest.

In one phase of their study, Thomas and Healy are focusing on two 10,000-acre areas. One is a timber-sale area; the other is uncut. After measuring populations on both tracts by trapping and banding wild turkey, scientists interview hunters who emerge from the areas. From their inquiries, they are able to determine what percentage of the original turkeys found in the cut area have stayed.

This study has been in progress for two years and will continue for several more -- to provide a complete picture of the impact of timber cutting on the game harvest and on the hunters' reactions.

It is anticipated that timber and wildlife managers will find the Forest Service research results important guides for their forest management programs. And hunters should have even greater success than before.

Home Sweet Home

When does a squirrel's den tree cease to be a den tree? For one, when the tree is harvested for saw logs or pulpwood. And what does the gray squirrel do when his den tree becomes lumber or paper? Generally we'd answer, "He finds another den to live in." But if one squirrel loses his den by a timber harvest, chances are there are other squirrels who have also lost their homes, so the competition for the new dens becomes very keen.

Wildlife researcher Reed Sanderson, in charge of squirrel studies.

What does the gray squirrel do when all the dens are occupied and winter is coming? Does he build a "winter" leaf nest? And if he does, what kind of winter shelter does the leaf nest provide? Can a litter of gray squirrels, born in a leaf nest in January or February, survive the winter weather?

These are some of the questions that wildlife scientists Reed Sanderson, at the U.S.D.A. Forest Service's Morgantown, W. Va., Laboratory, is looking at for answers. Sanderson is studying the gray squirrel's environment and behavior.

Recently Sanderson constructed a series of six squirrel pens; three pens have simulated tree dens called a den box and three have leaf nests. Each pen is occupied by one gray squirrel. The nesting area of the den boxes and the leaf nests are being fitted with an electronic heat sensor, called a thermistor. The temperature of each squirrel's nesting area will be recorded on a 24-hour basis. The nest temperatures obtained during periods of time when the nests are occupied will be compared. From this data, Sanderson expects to determine if man's concept that dens are warmer than leaf nests is true or false.

Sanderson also plans to compare the nest temperature patterns with data obtained during the same period of time from chillometers, instruments that measure heat loss due to chilling. Obtained data can be converted to calories to

provide some information on food requirements of gray squirrels living in leaf nests and dens. If it is decided a leaf nest is a suitable winter substitute for a tree den, will the gray squirrel need more food in order to keep warm and healthy?

Shortly Sanderson will begin another phase of his squirrel study. He will fence in a two-acre plot of tree-covered land and will study the behavior of the gray squirrels that will be confined in this area. He will be interested in whether the squirrels reproduce and rear their litters in captivity. He will also be interested in leaf nest and denning behavior, as well as the squirrels behavior toward each other.

Sanderson is hopeful that his studies will provide a clear picture of the denning or nesting requirements for gray squirrels. With this information, woodland owners will know how important it is to leave den trees. If a den is essential, then the woodland owner or forest manager will have the facts needed in order to decide how best to manage his land for both gray squirrels and timber. If, however, it is determined that gray squirrels can use leaf nests successfully, then the forest manager can shift his timber harvesting emphasis from shelter concerns to concentrate on harvesting methods that will insure a good supply of squirrel food, or mast.

In West Virginia, where this study is being conducted in cooperation with the West Virginia University, Division of Forestry, squirrels are the number one game animal.

Sanderson checks the research squirrel pens....

while a gray squirrel checks out his simulated tree den.